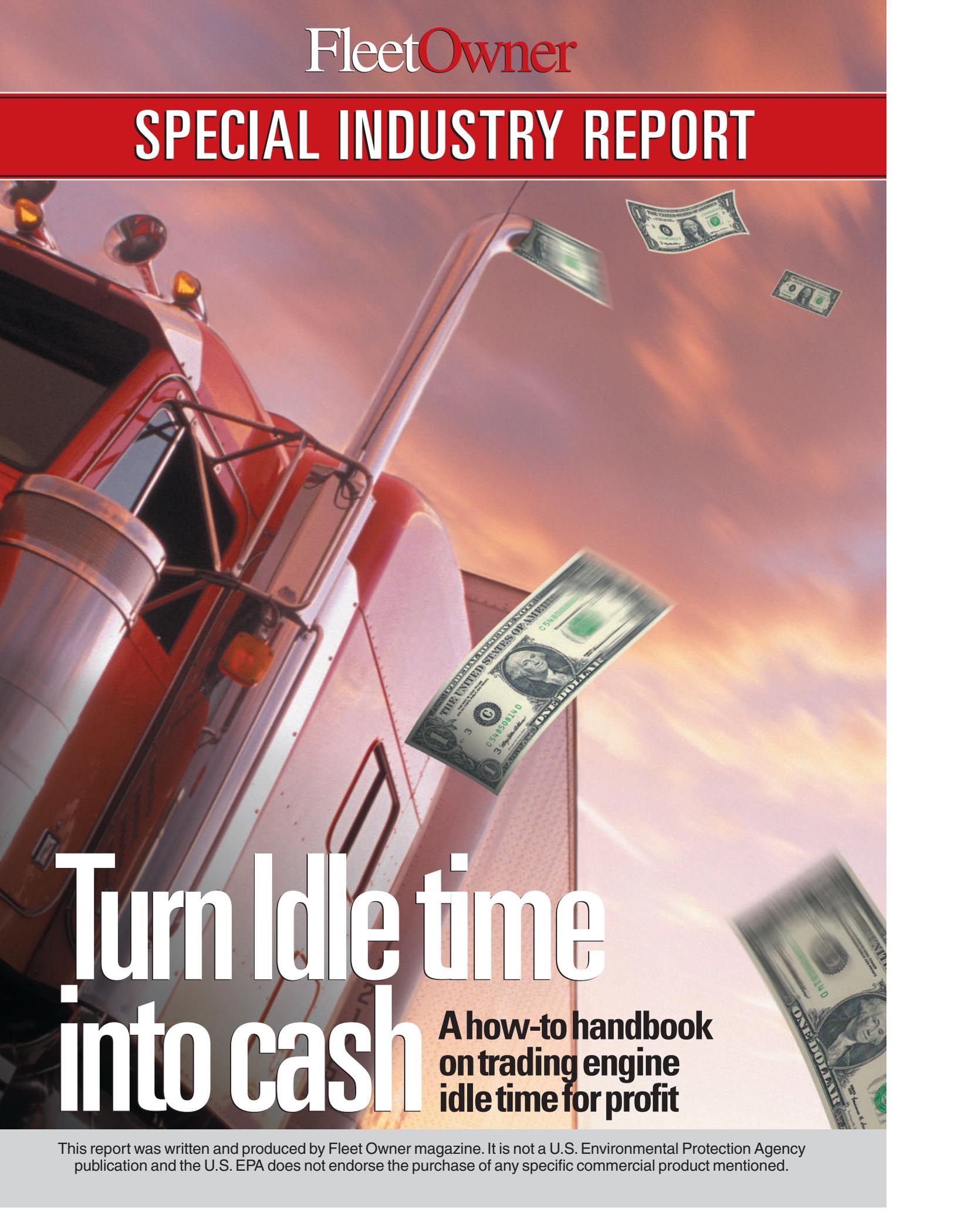


SPECIAL INDUSTRY REPORT



Turn Idle time into cash

**A how-to handbook
on trading engine
idle time for profit**

This report was written and produced by Fleet Owner magazine. It is not a U.S. Environmental Protection Agency publication and the U.S. EPA does not endorse the purchase of any specific commercial product mentioned.

Idle Time

Seize the day and share the benefits

Once in a great while, even in the trucking industry, there is a period where multiple factors converge at a single point, creating a circumstance rare and potent with energy and possibility. It is a time when battles are finally won, unexpected breakthroughs occur and fortunes are made or lost. It is a time when, long after the moment has passed, the winners will talk of opportunities realized and the losers will talk of fickle luck in an attempt to describe what happened and why.

BY WENDY LEAVITT

When it comes to trucking operations, especially to managing costs, this may be just such a time. Today, there are unique opportunities to dramatically cut operating costs and gain new competitive advantages by re-

ducing engine idling. There are new federal and state programs, new financial incentives and new solutions available to fleets that can make a major difference to the bottom line, right now.

"We have entered a truly unique period, where concerns about the environment, energy security, and highway safety line up perfectly with the transportation industry's own business goals," observes Mitchell Greenberg, manager of the SmartWay Transportation Partnership for EPA's Office of Transportation and Air Quality. "The federal government, individual states and municipalities, vehicle and component manufacturers, power suppliers, travel plazas, truck and bus fleets

and others are all very focused on reducing engine idling, for a wide variety of reasons. It is a rare merging of interest and initiative, and it is creating a win, win, win situation where everyone can benefit."

EPA GRANT

For starters, EPA recently awarded a \$200,000 grant to the Electric Power Research Institute (EPRI) and its project partners Xantrix Technology, Dometic Corp., Taylor Made, Phillips & Temro and the Sacra-

mento Municipal Utility District to demonstrate how the use of on-board AC power alternatives to long-duration idling can reduce fuel and maintenance costs and improve engine life. The project is actively seeking fleets to participate.

"We have the funding, we have the hardware and we would like to invite more fleets to participate," says Bill Warf, project manager with the Sacramento Municipal Utility District (SMUD). "Under this program, fleets are able to purchase one of three onboard idle-reduction technology packages and EPRI will reimburse 50% of the cost, install the technology on the initial truck and train drivers on its use. Then fleets track the technology's effectiveness at lowering fuel costs and reducing maintenance costs and other engine-related costs for 12 months. At the end of the test period, they reinvest the amount of money saved on the purchase of additional idle-reduction technologies."

To complement the program, SMUD is also addressing the shorepower side of the equation by installing AC power receptacles at the 49er Travel Plaza in the Sacramento, CA area, at the intersection of I-5 and I-80. "We have 16 spots powered and we can add to that if we see the demand," says Warf, "and for now, drivers are invited to use the AC power free on a first-come basis. It will really take three things to make AC power a viable alternative to idling: the necessary onboard hardware, access to shorepower and fleets and drivers willing to change their idling habits," he adds. "We are trying to address all three within this project." Call Bill Warf for more information (916-732-6976).

EPA'S SMARTWAY

Another EPA initiative that is capturing the attention of fleets and shippers is the SmartWay Transport Partnership, launched in January. According to Greenberg, it is a new voluntary partnership between sectors in the freight industry and EPA designed to improve the environmental performance of moving freight. Carriers can join the program



There are 21 IdleAire slots at the DeWitt rest stop near Syracuse, NY and 500 nationwide.

by committing to directly improve the environmental performance of their fleets by integrating innovative strategies into their fleet operations such as reducing idling, specifying lightweight components, etc. Shippers can join by committing to ship their goods with carriers signed up in the program.

"The concept is to help fleets save money and emissions by saving fuel," says Greenberg, "and to help shippers identify fleets that can, in turn, help them meet their own emissions reduction goals. We have a charter partnership group of carriers and shippers, including UPS, FedEx, Schneider National, Coca-Cola, and a dozen others that helped us design and sell the program." For more information, contact EPA (734-214-4767) or go to www.epa.gov/smartway.

TRUCK STOP ELECTRIFICATION

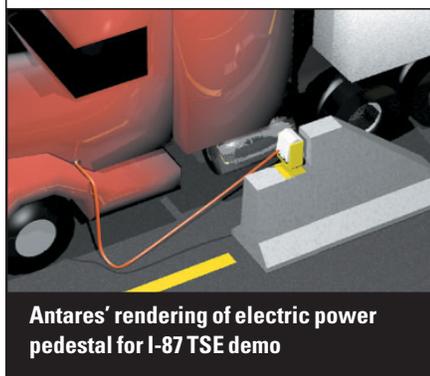
Another program that fleets should know about is the New York State Truck Stop Electrification

(TSE) Program. Working in partnership with the Niagara Mohawk Power Corp. and the New York State Energy Research and Development Authority (NYSERDA), the New York State Thruway Authority installed 45 IdleAire Technologies Advanced Truck Stop Electrification (ATSE) systems at rest stops in the Syracuse, NY area in 2002-2003.

The IdleAire systems are designed to deliver individually controlled heat and air conditioning, a color touch-screen computer, 110-volt electrical outlets, telephone connection, high-speed Internet and e-mail access, wireless Internet, satellite television, movies on demand and access to TREAD-1 interactive driver training programs from Instructional Technologies to trucks parked with the engine off. No special onboard equipment is needed to use the system other than a low-cost insert that slips into the side window.

"The truck stop electrification program has huge momentum here," says Donald B. Hutton, director of operations for the New York State Thruway Authority. "Our next electrification project is at the New Baltimore bi-directional plaza in Greene County, where we plan to add about 40 more IdleAire slots.

"The number of users is growing every day, and we are getting very positive feedback from drivers who seem to like virtually everything about our new installations, from



Antares' rendering of electric power pedestal for I-87 TSE demo

the quiet, to the heating/cooling system and the access to communications and entertainment," Hutton adds. "Data we are gathering with the help of NYSERDA (www.nyserdera.org) tells us that we are already also making an impact when it comes to reducing fuel usage and pollution. At the DeWitt location alone, NYSERDA estimates that we have burned 15,000 fewer gallons of diesel since the 21 IdleAire slots opened there last July. (See: www.thruway.state.ny.us)

I-87 ADIRONDACK NORTHWAY TSE DEMONSTRATION

Besides having access to the IdleAire parking slots near Syracuse, fleets also have an opportunity to participate in a new TSE project, according to engineer Joseph D. Tario, a project manager with NYSERDA. The new project, proposed by the Antares Group and funded by the New York State DOT, the U.S. Energy Dept. and NYSERDA, includes both the retrofitting of a fleet with the onboard equipment required to use shorepower and the installation of electric pedestals at a rest stop along the Adirondack Northway.

"The retrofit package for this project includes a Cab Comfort HVAC unit from Dometic, a Xantrex inverter/charger, cab power kits and wiring harnesses from Phillips & Temro and the Smart Energy Management System from Intellitec," says Thomas Perrot, senior project manager for Antares, an engineering consulting firm (www.antareshgroupinc.com). "The Intellitec system was originally designed to be used in RVs to automatically control power, cycling off circuits in a pre-selected order to limit power consumption. Although the current model has more circuit breakers than a truck requires, we believe use of this technology helps make AC-powered accessories both viable and dependable when used with shorepower."

"The big advantage of off-board TSE solutions like those in Syracuse is that no additional truck hardware or modifications are required to use the system," Tario offers. "The RV or

marine-style TSE model is much less expensive to install, however, and we believe that the majority of new trucks sold now and in the future will be manufactured with the onboard equipment required to take advantage of an AC shorepower infrastructure."

NYSERDA TSE DEMO

According to Tario, NYSERDA has also solicited proposals to accelerate the general development and commercialization of truck stop electrification equipment, systems, design and services. Under Program Opportunity Notice 784, the company announced its intention to award a \$1 million contract to a single commercial entity or joint venture that provides a plan leading to

the design, installation and commercial operation of shorepower TSE infrastructure in New York and the surrounding New England states.

Like the Adirondack Northway demonstration, this project focuses on RV- or marine-style systems that provide grid electricity to stationary, long-haul trucks for the operation of onboard HVAC units, block heaters and other in-cab devices. Proposals were due on August 27, 2003.

"Over the next five to ten years, we expect to see a variety of alternatives to idling in use, from Advanced TSE like the current IdleAire systems, to RV- or marine-style TSE installations to other solutions like auxiliary power systems," Tario

Smarter alternatives to engine idling

SO MANY CHOICES :

Auxiliary Power Generators

- AUX Generators, Mississauga, ONT, Canada
www.auxgenerators.com, 877-843-5289
- Cummins Commercial Power Systems, Minneapolis, MN, www.onan.com, 763-574-5000
- Energy & Engine Technology Corp., Plano, TX
www.eent.net, 972-732-6360
- SCS/Frigette Truck Climate Systems, Fort Worth, TX, www.scsfrigette.com, 800-545-6341
- Teleflex Canada, Richmond, BC, Canada
www.proheat.com, 604-270-6899
- TruckGen, Jacksonville, FL
www.truckgen.com, 904-378-1220

Auxiliary Power Units (integrated)

- Auxiliary Power Dynamics, LLC, Sparks, NV
www.auxiliarypowerdynamics.com, 800-825-4631
- Double Eagle Industries, Shipshewana, IN
www.doubleeagleind.com, 800-227-4121
- Pony Pack, Inc., Albuquerque, NM
www.ponypack.com, 505-243-1381

Electrical Power on- and off-board

- IdleAire Technologies Corp. Knoxville, TN
www.idleaire.com, 865-342-3659
- Phillips Industries, Sante Fe Springs, CA
www.phillipsind.com, 562-781-2121
- Phillips & Temro, Eden Prairie, MN
www.zerostart.com, 952-941-9700

- Xantrex Technology, Burnaby, BC, Canada
www.xantrex.com, 360-435-8826 (USA)

Engine Idle Management Technology

- Caterpillar Engine Co., Mossville, IL
www.cat.com, 309-578-1600
- Cummins Engine Co., Columbus, IN
www.power.spec.cummins.com, 800-343-7357
- Detroit Diesel Corp., Detroit, MI
www.detroitdiesel.com, 313-592-5000

Fuel-Fired and other No-Idle Heat and/or HVAC Systems

- Bergstrom, Inc., Rockford, IL
www.nitesystem.com, 815-874-7821
- Cab Comfort, Elkhart, IN
www.dometic.com, 574-294-2511
- Espar Heater Systems, Mississauga, ONT
www.espar.com, 800-387-4800
- Taylor Made Environmental, Inc. Richmond, VA
www.taylormadegroup.com, 804-746-1313
- Webasto Product North America, Lapeer, MI
www.webasto.com, 800-HEATER-1

Other Systems

- International Power Systems (Rig Master Power), Toronto, ONT, Canada
www.rigmasterpower.com, 416-201-0040
- Safer Corp., Anaheim, CA
www.saferco.com, 877-777-2337

notes. "It just makes so much sense. The only ones who don't stand to benefit are foreign oil suppliers."

DOE'S IDLE REDUCTION TECHNOLOGIES DEMONSTRATION

Reducing the country's dependence on foreign oil is just what the Dept. of Energy's newest Idle Reduction Technology Program is all about. "DOE recently sent out a solicitation for projects to install idle reduction (IR) equipment onboard trucks that will provide stand-alone cab/sleeper heating and cooling and electricity for standard plug-in devices like laptop computers," explains Leslie Eudy, a project leader at DOE's National Renewable Energy Laboratory. "The two best technology proposals were selected for funding this summer, and we hope to finalize and announce our agreements soon.

"The next step is for fleets to use the IR technology on their vehicles and collect and report their findings," Eudy continues. "The things we learn from this project about idle reduction technologies, including their up-front and operating costs and issues related to their use, will be widely shared with fleets, owner-operators, OEMs and drivers." (See: www.osti.gov/bridge or call 865-576-8041 and request NREL/TP-540-33629.)

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT

Fleets interested in supplemental funding for implementing alternatives to idling should also learn about the Congestion Mitigation and Air Quality Improvement (CMAQ) Program managed by the FHWA. Its purpose is to fund projects and programs to reduce transportation-related emissions in air quality non-attainment and maintenance areas where pollution levels are above national limits. Typically, cities or states are granted CMAQ budgets to help fund projects in their area, and agencies or groups are often hired by the state or city to actually manage and administer the grant funds.

Earlier this year, the FHWA issued a memorandum clarifying the eligibility of idle reduction devices for funding: "Programs providing auxiliary power units in heavy-diesel trucks to reduce extended idling can be deemed eligible if there is some assurance that the vehicle's range of operation will be predominantly in the non-attainment or maintenance area." (See: www.fhwa.dot.gov/environment.)

CARL MOYER PROGRAM

The Carl Moyer Clean Engine Incentive Program in California is funded under Proposition 40 and administered by the California EPA's Air Resources Board. It offers fleets up to \$1,500 per vehicle toward the instal-



Bergstrom air conditioning system employs deep cycle batteries as a power source.

lation of devices to reduce idling. If the device happens to be a high-technology system such as a fuel cell auxiliary power unit, the subsidy jumps to \$2,500 per truck. The main requirement is that the device be used within the State of California for a minimum of 100 hours per year for five years. (See: www.arb.ca.gov/msprog/moyer/.)

IDLE-FREE CORRIDORS

Brand new on the list of EPA-sponsored initiatives, the National Transportation Idle-Free Corridors program was developed to "zero-out all the idling that is taking place at truck stops, rest areas, parking lots, and warehouse facilities," says EPA's Mitchell Greenberg. "Vehicles waste at least one billion gallons of fuel idling, going nowhere, every year in the U.S. The related emission rates are just way too high in exchange for doing no work at all.

"We need to see immediate reductions in emissions, so the focus in this program is really on deployment," he adds. "We will be working very aggressively to put together people from fleets, manufacturing, truck stops, suppliers and this agency to identify logical places to begin building out the Idle-Free Corridor." Contact Paul Bubbosh at EPA for more information (202-564-9322).

REALLY MOTIVATED

The current national interest in reducing idling is, in part, being driven by the requirements of the Federal Clean Air Act, which resulted in clean air goals for America's most polluted areas and penalties in the form of loss of federal funding for transportation projects for failure to meet those goals. For regions struggling to meet compliance deadlines, it is an increasingly serious matter. The Houston-Galveston region, for example, has until 2007 to meet their air quality goals. According to the Houston-Galveston Area Council, failure to do so will result in the loss of approximately \$1 billion in annual transportation funding.

"It seems like everybody is suddenly interested in truck stop electrification and other alternatives to idling," observes George Strickland, vp-engineering and construction for Travel Centers of America. "The thing is, it has always been so easy to idle."

"The only thing standing in the way of progress now is the very old habit of idling," agrees engineer David Orr, commercial manager for Caterpillar's Mor-Electric Technology. "When it comes to reducing emissions, reducing idling is a fairly low-cost means to make big gains quickly, and I think people are starting to realize that. The next 24 months will be very interesting, very exciting." ■

Kicking The Idling Habit



You can have it all: comfort + cost savings

Idling a truck's engine was once the only way a driver could control the temperature in the cab/sleeper and have power for auxiliary devices when the truck was parked. Sure, it was a dirty, noisy business and every truck wasted thousands of gallons of diesel per year going absolutely nowhere, but that was the way it was.

Now, even though there are more than two dozen different alternatives to idling commercially available, that dirty little habit hangs on. If your company hasn't given up idling, this is the perfect time to shop around

for the alternative solution that will best fit your operation. Here are some of the options available today.

GENERATORS AND APU'S

Auxiliary power generators and APU's (auxiliary power units) are not really the same, although the terms are sometimes used interchangeably. Generators, powered by 1-, 2-, 3- or 4-cyl. diesel engines, produce electricity to run AC-powered devices, from heaters and air conditioners to microwave ovens. Many suppliers also offer an AC power-plus-climate control package and DC battery charger functionality.

APU's, on the other hand, typically include an engine, compressor and alternator, and are fully integrated into the truck's own HVAC system to provide climate control, battery charging and engine heating. The addition of an inverter/charger allows APU's to work as a source of AC power as well.

One of the chief benefits of both generators and APU's is their portability. Because the systems are truck-mounted, they can be used virtually anywhere. Those who favor generators say they like the idea of a self-contained system that can be installed without touching a truck's own HVAC

system. Fans of APU's, on the other hand, like the idea of using the original factory-installed HVAC system and controls, rather than adding additional heating and cooling equipment.

The AXP 1000 auxiliary power generator from Energy & Engine Technology Corp., for example, is run by a 4-cyl., air-cooled 7.5-hp. Lombardini diesel engine that conforms to current Clean Air Act and CARB standards. The generator set produces 5kW AC current at 120 volts continuous plus 40 amps DC power. A variety of heater and air conditioner options can be paired with the system and are available as a package.

"All we do is generate electricity," explains CEO Will McAndrew III, "and we do that very efficiently, burning only about 1.2 pints of diesel per hour as opposed to the more than a gallon per hour an idling truck engine consumes. There is no 'standard' AXP unit because there is no standard truck, but our adjustable carriage assembly permits it to be mounted almost anywhere."

Teleflex Canada makes an auxiliary power and climate control system called the Proheat Gen 4. Powered by a 13.9 hp., 2-cyl.- Kubota engine, it is designed to provide 4,000 watts of 115-volt household AC current, 10,000 Btu/hr. of heating and 12,000 Btu of cooling, plus truck engine heating and battery charging, according to Mengo McCall, manager of western regional sales for the company. "We design, assemble and market the entire system ourselves, from the gen set to the heater and air-conditioner units," he notes.

TruckGen of FL also makes diesel-powered generator sets designed to provide 120-volt AC power and 12-volt DC power. According to Klaus Holze, sales director for TruckGen, the demand for their battery box- enclosed auxiliary generators has "never been better."

The Pony Pack APU, now avail-

able as an option from Volvo Trucks North America, is an example of a "true" integrated APU. It utilizes a Kubota 2-cyl., 10.8-hp. engine and an A/C compressor to operate the truck's existing HVAC systems and provide 12-volt DC electricity (and a 110-volt inverter) to operate truck accessories when the truck's engine is off.

In 2002, EPA published a study comparing fuel use and emissions at idle for several heavy-duty truck engines and two idle reduction devices, including the Pony Pack APU. "The data showed that our unit provided very significant reductions in fuel consumption," says Rex Greer, company president. "The 2000 Pony Pack was also found to be capable of reducing NOx emissions by 89% to 96% and CO₂ by 52% to 81%."

Double Eagle Industries has also developed an APU to meet the power needs of their super-sized Double Eagle sleepers, according to Ray Miller, president and owner. Their Gen-Pac is powered by a 3-cyl., 18-hp. engine

pre-set to run at 1800 rpm, he notes, putting out a steady 5,000 to 7,000 watts of DC power.

Another APU option is offered by Auxiliary Power Dynamics. "We can run everything on the truck now except the driveshaft," says Eldon Willis, COO. "Our baseline APU includes a 3-cyl. diesel engine, alternator, A/C compressor and coolant circulation through a heat exchanger, but we also offer a number of options, including an oil pump, air compressor, air starter and 2,500-watt inverter.

"We've gone to a microprocessor controller," he adds. "This makes the system fully automatic. When the driver sets the parking brake, the APU starts and the truck engine is programmed to shut down."

NO-IDLE HEAT AND A/C

For fleets and drivers that idle primarily to keep the cab and sleeper at a comfortable temperature and the engine ready to start, there are a variety of options available designed to provide heat, air conditioning or both. Some units run on diesel. Others run on DC electrical power from batteries and/or on AC power, either externally supplied shorepower or from a batteries-plus-inverter system.

Webasto Product North America, for instance, offers fuel-operated heaters for engines, cabs and cargo-space heating. The Air Top 2000 sleeper heater and new Tandem Kit Air Top 2000, which includes a small engine pre-heater unit, have been the company's most popular products, according to Don Kanneth, director of sales services for Webasto's heavy-duty OEM and aftermarket group. "Our Air Top can run 20 hours on a gallon of fuel," he says.

Espar Heater Systems offers a diesel-fired bunk heater, the Airtronic 2, and an engine pre-heater, the Hydronic 5. Espar's heater may be combined with one of two electrically driven air-conditioning units to provide no-idle heating and air-conditioning. "The Airtronic 2 burns .03 to .07 gal./hr. to produce 2,900 to 7,500 Btu/hr. It doesn't take much to do that math," says John Dennehy vp-marketing for Espar.

The DC-powered, hermetically sealed NITE air-conditioner unit from Bergstrom has its own batteries, air distribution system, and power control system, according to Terry Zeigler, director of new product development. "Our two, six-volt, deep-cycle batteries in series are designed to operate up to 10 hours between charges," he says.

Still another climate control choice is the heating/cooling option from Cab Comfort, a division of Dometic. The Duo-Therm compressor-driven heat-pump system is run entirely on AC electricity, externally supplied or from the Kwyatt Power battery/inverter system or onboard generator.

"Our unit is designed specifically for rest periods in the sleeper," says Pat McConnell, director of quality,

Auxiliary power generators and APU's (auxiliary power units) are not really the same.

safety and standards for Dometic and program manager of the Cab Comfort Commercial Products Group.

ENGINE-BASED SYSTEMS

Fleets that want to reduce engine idling with no additional equipment of any kind are looking to engine markers for solutions and finding a number of options. Detroit Diesel Corp., for example, offers four idling management capabilities, including Optimized Idle, an option on its Series 60 engines, according to Tom Diefenbaker, director of electronic product business development.

"Idle shutdown is a standard engine feature," Diefenbaker says. "When the parking brake is set, the engine can be programmed to shut down automatically after two to 100 minutes. The inactive idle shutdown function will shut the engine off after 20 minutes, even if the parking brake is not set. There is also an ambient temperature idle shutdown override function which allows the fleet owner to set temperature ranges in which idling is permitted.

"Optimized Idle is a patented system designed to monitor the engine temperature, cab temperature and battery voltage and then stop and start the engine when the truck is parked as necessary. In overnight idle situations, it reduces idling time by about fifty percent," he explains. "The cost savings in fuel alone typically result in a payback period of six to nine months."

Cummins Engine Co. also offers a number of idle management tools, according to Clifford Putterill, marketing product leader for heavy-duty automotive. Idle shutdown is standard on all engines, he notes, and the ICON Idle Control Technology and Cab Comfort systems are available as options.

"Engines leave the factory with the standard idle shutdown function set at 60 minutes," he explains, "but it

can be reset for any time between two to 1,440 minutes. Most customers set it at five minutes if they activate the function. In traffic, a warning light flashes to alert the driver that the idle shutdown is pending, so that they can reset the idle shutdown timer by tapping any pedal. The idle rpm can also be reset.

"The ICON Cab Comfort System is designed to automatically control engine starting and stopping when the truck is parked in order to reduce excess idle time, control the temperature in the cab and maintain the engine in a ready-to-start condition," Putterill adds. "ICON has three modes: the Engine mode, Cab Comfort mode and Mandatory Shutdown mode. When ICON is activated, it

continuously operates in the Engine mode, monitoring engine oil temperature and battery voltage. If either drops below the set level, the engine is automatically started.

"In the Cab Comfort mode," he continues, "the driver turns on a thermostat mounted in the sleeper to also activate ICON cab temperature monitoring and maintenance. When

ICON is not active, the engine will shut down after five or fifteen minutes to prevent excessive idling. We believe very strongly in the future of these integrated vehicle management systems and expect them to evolve to even greater levels of integration in the future," Putterill observes.

Caterpillar Engine Co. also offers an idle shutdown timer as a standard feature on its electronic engines. It can be programmed to automatically shut the engine off after three to



Espar's Airtronic diesel-fired bunk heater is about the size of a loaf of bread.

60 minutes of idling. A warning light begins flashing 90 seconds before shutdown; operators can reset the timer by depressing either the clutch or the brake while the light is flashing.

Caterpillar's

Electronic & Electrical System division is developing other non-engine based, idle reduction solutions, according to David Orr, commercial program manager for CAT's MorElectric technology. "The MorElectric System, which will be available in October 2005, provides an electric heating, ventilating, air conditioning (HVAC) module to reduce fuel consumption, lower emissions and improve reliability," he says. "A high-efficiency generator replaces the alternator to power the HVAC while on the road.

"The MorElectric technology grew out of a Dept. of Energy research and development program, called 'Parasitic Energy Loss Reduction and Enabling Technologies for Class 7/8 Trucks,' that we are doing with team members Kenworth Truck Co., Engineered Machine Products and Emerson Electric Co.," Orr continues. "In this research program, we are electrically driving various engine accessories, such as the water pump, oil pump, brake air compressor and the HVAC system, providing fuel and emission savings over the typical belt- or gear-driven arrangements used today. The prototype truck is built and currently undergoing on-road fuel economy testing.

"Our integrated APU is designed to complement the MorElectric system," he continues. "From customer surveys, we found that truck operators need to have a comfortable cab anytime and anywhere. So, while we believe shorepower can be a viable idle reduction solution longer term and along certain corridors, we also believe there will be a need

Trucks configured to permit the use of shorepower AC can simply "plug in" instead of idling wherever shorepower is available.



for APU's. Once you have this electric AC capability on-board, then you can take advantage of AC shorepower when it is available or add an APU (www.cat.com/MorElectric.htm).

OFF-BOARD SOLUTIONS

As Orr notes, in addition to all of these onboard idle reduction solutions, trucks configured to permit the use of shorepower AC can simply "plug in," instead of idling, wherever shorepower is available. Availability, of course, has been the obstacle thus far, but, as the projects described earlier suggest, this situation may be changing rapidly.

IdleAire Technologies, Knoxville, TN, is also bringing an entirely "off-board" alternative to the marketplace that can be used by almost any heavy-duty truck. What is more, the IdleAire system is designed to deliver not only individually controlled heat and air conditioning, but

also a color touch-screen computer, 110-volt electrical outlets, telephone connection, high-speed Internet and e-mail access, wireless Internet, satellite television, movies on demand and access to TREAD-1 interactive driver training programs from Instructional Technologies to trucks parked with the engine off. There are no special onboard equipment requirements to utilize the IdleAire multi-service consoles, other than a low-cost insert that slips into the side window.

"We see our core business as travel center electrification, TSE," explains David Everhart, senior vp of strategic relationships. "When we added the communications, entertainment and information technology functions to our system, we did not know that we would be changing the way drivers communicate with the fleet. Today carriers are utilizing the IdleAire system to do a number of things from conducting

IdleAire Technologies AC power solutions require no special onboard equipment other than a low-cost window insert.

virtual driver safety meetings to providing training, and subscriptions to the service are being used as driver recruiting and retention tools. Our TSE has become Advanced TSE or ATE. "

IdleAire currently has 18,000 subscriber users, according to Everhart, and an aggressive rollout schedule to dramatically expand the service from its current ten locations and 500 spaces over the next four to five years.

"Idling costs the trucking industry as much as \$5 billion per year for fuel alone," Everhart observes. "It is a shame that so many people are waiting for the magic bullet, the perfect solution to end idling, when the technology is here today." ■

Idle reduction incentives from Canada

While the list of regulatory “sticks” from the states is long and growing longer for idling, Canada has been busy crafting a number of “carrot” programs to reward fleets and owner-operators for turning off their truck engines. Three separate programs address the problem from three different perspectives: onboard idle reduction equipment, truck stops and emissions reduction research.

On August 12, 2003, Canada’s prime minister announced the launch of a new program designed to provide commercial truck fleets and owner-operators with rebates for installing approved idle reduction equipment. “The program is part of a \$1 billion package to address the climate change issue,” says Linda Harvey, senior program manager for FleetSmart, a voluntary program administered by Natural Resources Canada to assist fleets in reducing their fuel usage.

“Effective today, fleets can receive 19 percent off the unit price of approved heaters, air-conditioning units, and auxiliary power systems designed to replace engine idling. The maximum rebate for an auxiliary power unit is \$1,400 and the maximum for heater and air-conditioner systems is \$350.

“The program is open only to Canadian fleets, but the equipment may be sourced from outside Canada,” she adds. “We have funding for at least two years and we hope it will go beyond that.”

Another project, this one to encourage truck stops to become “Idle-Free Quiet Zones,” is in its second year, according to Harvey. “This year, the Idle-Free campaign will run from mid-October to December 19, 2003,” Harvey says. “Fifty-three truck stops have already signed up to participate.

“Basically, the stops will display Idle-Free Quiet Zone banners and share information about reducing idling while drivers will have the opportunity to experience for themselves the benefits of a quiet, idle-free truck stop environment,” she explains. “By the time the pilot program ended last year, more drivers were saying to us, ‘It’s about time somebody did something like this.’”

MATCHING FUNDS

Finally, another Transport Canada/Natural Resources Canada program recently put \$4.5 million in financing out for tender for project proposals to demonstrate ways in which Canada can reduce greenhouse gas emis-

sions. The five-year program is called the Freight Efficiency and Technology Initiative, notes Harvey, and any company, including commercial truck fleets, is eligible to apply for \$250,000 in matching funds under the terms of the project. Details and an application form are available on the FleetSmart web site (http://oe.nrcan.gc.ca/fleet_smart).

According to John Dennehy, vice president of marketing for Espar Heater Systems, the company’s “Greenhouse Gas Reduction through Idle Reduction” proposal was accepted for funding and work will begin this fall. A number of Canadian fleets will be participating with Espar through 2003-2004 to gather data for Transport Canada on the reductions in idle time (and, hence, the reduction in total emissions) achieved by using the company’s Airtronic Bunk Heater and Hydronic 5 Engine Preheater, Dennehy notes.

GOOD NEWS ALL AROUND

Canada’s take-action approach to reducing idling is good news for fleets, drivers and the environment. “Since Canada Signed the Kyoto Protocol to reduce greenhouse gases, we have seen a number of new emission-reduction programs,” explains Mengo McCall, western regional sales manager for Teleflex Canada, supplier of the ProHeat Gen 4 auxiliary power and climate control system. We are very optimistic about the future.”

“We are at the crest of a wave of change concerning engine idling practices,” agrees Dennehy. “The incredible work being done today by government agencies in Canada and the U.S. is helping to create new momentum, to encourage the trucking industry to trade idling for something better, and everyone stands to benefit.”

The Sticks

When it comes to reasons for reducing idling, there are “carrots” and then there are sticks

States, provinces and municipalities are cracking down on truck idling with new regulations, stricter enforcement of existing limits and hefty fines to drive the point home. Enforcement responsibility rests with a variety of entities, from health officials to the Highway Patrol, but regardless of who is writing the citations, the message is clear: the days of idling legally are drawing to a close.

Here is a brief summary of the idling and smoke emissions requirements currently in place.

Virtually every state and municipality regulates vehicle noise, so noise limits are not included here.

Alabama Prohibits the emission of “visible air contaminants from diesel-powered motor vehicles or other movable sources” of a shade or density greater than 20% opacity for longer than five consecutive seconds.

Arizona Regulates smoke emissions and limits idling to five minutes statewide. There are exemptions for traffic conditions, on-board equipment like reefer units and for heat/cooling for drivers sleeping in parked vehicles.

California Regulates smoke emissions statewide. Idling is limited to 30 minutes at marine ports and terminals processing 100,000+ containers a year. Certain municipalities also limit idling. The California Air Resources Board announced

that it’s considering a statewide ban on idling of heavy-duty diesel vehicles. Beginning with model-year 2007, idling would be limited to five minutes and vehicles would be required to have a tamper-proof engine idle shutdown device or Alternative Power Unit (APU).

Colorado Regulates smoke emissions statewide. Idling restrictions are also in place within Denver, Aspen and Colorado Springs. There are certain exemptions for low ambient temperatures, emergencies, etc., but not for sleeping in the vehicle.

Connecticut Limits idling to three consecutive minutes. Certain exemptions are made for traffic congestion, breakdowns, engine heating at temperatures below 20 degrees F. and the operation of heating, cooling or auxiliary equipment if necessary to accomplish the intended use of the vehicle. Air Management personnel

enforce the regulations.

District of Columbia

Limits truck idling to three minutes, unless vehicle is powering PTO or ambient temperature is below 32 degrees F. Enforcement is handled by Air Quality Division field officers, metropolitan police, and parking enforcement personnel. Fines are \$500 for a first offense, \$1000 for a second, \$2000 for the third and \$4000 for a fourth offense. Other penalties may also apply.

Georgia Idling restrictions are in place for Atlanta.

Hawaii Idling is prohibited statewide, including for powering A/C. There are some very limited exemptions. The Department of Health enforces the regulations. Fines can reach \$25,000 per day for each offense.

Illinois Idling is prohibited on business streets statewide for longer periods than are necessary to load/unload.

Maryland Idling is generally limited statewide to five minutes, with some specific exemptions. The

State Highway Patrol enforces idling regulations.

Massachusetts Idling is limited statewide to five minutes with certain exceptions. Regulations may be enforced by police, fire, board of health or building inspection personnel. The City of Boston actively enforces anti-idling restrictions with a dedicated anti-pollution enforcement team.

Minnesota

The City of Owatonna limits idling on residential streets.

Missouri

The City of St. Louis limits truck idling to ten minutes. There is a fine of up to \$500 for violations and the possibility of up to 90 days imprisonment.

Montana

During periods of poor air quality (as declared by the health department) Lewis & Clark County limits idling to two hours in any 12-hour period. The City of Helena limits idling to two hours.

Nevada

Regulates smoke emissions statewide and limits idling statewide to 15 minutes except for emergency vehicles, vehicles in traffic congestion, while vehicles are being repaired, for operation of certain specified equipment or when emissions are treated and/or contained by an approved means. Fines are \$100 to \$500 for a first offense, \$500-\$1,000 for a second, \$1,000-\$1,500 for the third and \$1,500-\$2,500 for a fourth offense.

New Hampshire

Limits idling statewide to five minutes if the ambient temperature is above 32 degrees F. Limits are extended to 15 minutes when the ambient temperature is between -10 degrees and +32 degrees F. Unlimited idling is permitted if the temperature is below -10 degrees F. "where no nuisance is created."

New Jersey

Limits idling of diesel- or gasoline-powered trucks

statewide to three minutes unless the vehicle is at the operator's place of business, then the limit is 30 minutes. If a vehicle has been stopped for three or more consecutive hours, idling is limited to 15 consecutive minutes. There are specific exemptions, including for operating refrigerator units and PTOs and for truck sleepers in non-residential areas if the driver is sleeping or resting.

New Mexico

Regulates smoke emissions statewide, specifically including emissions during idling. Smoke opacity is limited to 30% for no more than ten seconds at altitudes of less than 8,000 ft. or 40% when vehicle is being started.

New York

Limits diesel truck idling statewide to five minutes with exemptions for powering certain auxiliary equipment such as PTO's or cranes or if a truck is motionless for more than two hours and the ambient temperature is below 25 degrees F. Within New York City, idling is limited to three minutes. Anti-idling laws are enforced, generally by the State Highway Patrol.

Pennsylvania

Limits diesel truck idling within the City of Philadelphia to two minutes. Trucks may idle for up to five minutes when the ambient temperature is below 32 degrees F. and for up to 20 minutes when the temperature is less than 20 degrees F. Enforcement is by Air Management Services or police department personnel. Fines are \$300 per day, per violation with court appearances possible for repeat offenders.

Rhode Island

Regulates smoke emissions statewide.

Texas

Has local idling limits for diesel trucks in several cities, including Houston and Dallas. In eight counties in the Houston-

Galveston area idling is also prohibited for more than five minutes during the months of April through October. There are some exemptions. Fines range from \$500-\$1,000.

Utah

Regulates smoke emissions statewide and limits continuous idling to 15 minutes in Salt Lake, Davis and Utah Counties in the Salt Lake City area. Davis and Utah Counties permit up to 45 minutes of idling in a 120-minute period. There are certain exemptions, including for emergency vehicles, to supply power to refrigeration units and to supply heat/AC to sleeper cabs. In Salt Lake County, environmental, health, police or Highway Patrol officers may issue citations. Fines typically begin at \$500 and are determined by the nature of the violation.

Virginia

Limits idling to three minutes in commercial and residential areas unless it is to provide power for devices other than for heating or cooling the driver. Diesel trucks may idle up to ten minutes to minimize restart problems. The Department of Environmental Quality enforces idling regulations.

Washington

Regulates smoke emissions statewide.

British Columbia

Regulates smoke emissions province-wide.

Ontario

Regulates smoke emissions province-wide.

NOTE: Information on regulations is drawn from several sources, primarily the Department of Energy and the Environmental Protection Agency.

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